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Lectura recomendada

First ex vivo study demonstrating that 99mTc-NTP 15-5 radiotracer binds to human articular cartilage

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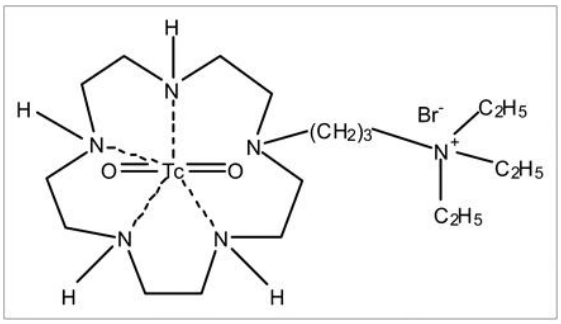

^{99m}Tc-*N*-[triethylammonium]-3-propyl-[15]ane-N5 (^{99m}Tc-NTP 15-5).

Purpose: Preclinical data pointed to 99mTc-NTP 15-5 as a good candidate for single photon emission computed tomography (SPECT) imaging of cartilaginous disease. We set out to investigate and quantify 99mTc-NTP 15-5 ex vivo uptake by human articular cartilage relative to bone 99mTc-hydroxymethylene diphosphonate (HMDP) radiotracer.

Methods: Three osteoarthritic human tibial plateaux and four tibiofemoral joints were incubated with 99mTc-NTP 15-5 and 99mTc-HMDP for 2 h. Affinity of tracers for cartilage was determined by visual analysis of SPECT/CT acquisitions and measurement of cartilage to cortical bone uptake ratios.

Results: Cartilage to cortical bone uptake ratios were 3.90 ± 2.35 and 0.76 ± 0.24, respectively, for 99mTc-NTP 15-5 and 99mTc-HMDP radiotracers. Visual analysis of fused SPECT/CT slices showed selective, intense 99mTc-NTP 15-5 accumulation in articular cartilage, whereas 99mTc-HMDP binding was low. Interestingly, a cartilage defect visualized on CT was clearly associated with focal decreased uptake of 99mTc-NTP 15-5.

Conclusion: The tracer 99mTc-NTP 15-5 is of major interest for human cartilage molecular imaging and could find clinical applications in osteoarthritis staging and monitoring.

Colabora con Farmacéuticos Mundi (**FarmaMundi**) **(**http://www.farmaceuticosmundi.org/**)**